



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

*Handwritten signature*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/609,822	07/03/2000	Jin-gyo Seo	1293.1076D/STB	2532
21171	7590	09/13/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			BATTAGLIA, MICHAEL V	
			ART UNIT	PAPER NUMBER
			2652	

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/609,822	Applicant(s) SEO ET AL.	
	Examiner Michael V Battaglia	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 19-26 and 28-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-26 and 28-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/23/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/19/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This action, dated September 9, 2004, is in reply to Applicant's amendment, filed June 14, 2004. Claims 19-26 and 28-37 are pending.

#### *Claim Objections*

1. Claim 33 is objected to because of the following informality. On lines 7 and 9 of claim 33, replacing "second" with -last- is suggested to avoid lack of proper antecedent basis issues.

Appropriate correction is required.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Furukawa et al (hereafter Furukawa) (US 6,345,026 and WO98/28735). The citations below reference the US patent.

Furukawa discloses a recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising: a generator (Fig. 1, elements 62-63) to generate an adaptive write pulse using a grouping table having width data of a first and/or last

Art Unit: 2652

pulses of a write pulse waveform, with magnitudes corresponding to the adaptive write pulse being grouped in the grouping table according to a short pulse group, a middle pulse group and a long pulse group (Col. 6, Table 1 and Col. 7, Table 2); and a processor (Fig. 1, element 60) to process data on a recording medium, wherein the adaptive write pulse includes a first pulse, a last pulse and a multi-pulse train (Fig. 2). It is noted that the pulse generator (Fig. 1, element 60) processes the information on the recording medium by breaking the recording marks if the information into a first pulse, last pulse, and a multi-pulse train. The magnitudes of the front and back spaces are interpreted as the magnitudes corresponding to the adaptive write pulse. The magnitudes are grouped according a 3T (short pulse) group, a 4T (middle pulse) group and a 5T-11T (long pulse) group.

3. Claims 19-22, 24-26, 28-33, 35 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Shoji et al (hereafter Shoji) (US 6,175,541).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Applicant cannot rely upon the foreign priority papers to overcome these rejections because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

In regard to claim 19, Shoji discloses a recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising: a discriminator (Fig. 1, element 127

Art Unit: 2652

and Col. 12, lines 54-57) to discriminate a magnitude of a present mark of input data and magnitudes of leading and/or trailing spaces of the present mark; a generator (Fig. 1, elements 110 and 127) to control generation of a write pulse waveform in accordance with a grouping table (Fig. 4A) having width data of first and/or last pulses for the write pulse waveform according to the magnitude of the present mark of the input data and the magnitudes of the leading and/or trailing spaces (Figs. 22 and 23), with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group (Fig. 4A, element 3T), a middle pulse group (Fig. 4A, element 4T) and a long pulse group (Fig. 4A, element  $\geq 5T$ ); and a driver (Fig. 1, element 109) to drive a light source by converting the write pulse waveform into a current signal in accordance with driving power levels for the write pulse waveform.

In regard to claim 20, Shoji discloses that the generator includes: a write waveform controller (Fig. 1, element 127 and Col. 12, lines 57-61) to generate pulse width data to vary a width of the first pulse of the write pulse in accordance with the magnitude of the leading space and the magnitude of the present mark (Fig. 22) and to vary a width of the last pulse of the write pulse in accordance with the magnitude of the present mark and the magnitude of the trailing space (Fig. 23); and a write pulse generator (Fig. 1, element 110) to generate the write pulse waveform in accordance with the pulse width data (Col. 12, lines 62-65).

In regard to claim 21, Shoji discloses that the write waveform controller comprises a memory in which the pulse width data of the first and/or last pulses for the write pulse waveform are stored (Fig. 1, element 127).

In regard to claim 22, Shoji discloses a microcomputer to initialize the write waveform controller and control the pulse width data stored in the memory to be updated in accordance with write conditions (Fig. 1, element 120; Col. 12, lines 16-22; and Col. 13, lines 48-Col. 14, line 7).

In regard to claim 24, Shoji discloses that the memory stores the pulse width data of the first and/or last pulses for the write pulse waveform for respective zones on the optical recording medium (Col. 10, lines 27-32 and Col. 12, lines 8-15).

In regard to claim 25, Shoji discloses that light power for a predetermined one of channels of the write pulse waveform is applied during a period corresponding to a varied width of the first pulse and during a period corresponding to a varied width of the last pulse (Figs. 22 and 23).

In regard to claim 26, Shoji discloses that a light power for the predetermined channel is a read power or a write power (Col. 10, lines 38-50). The peak power is interpreted as a write power.

In regard to claim 28, Shoji discloses that the generator generates pulse width data by varying a rising edge of the first pulse of the write pulse in accordance with the magnitude of the leading space and the magnitude of the present mark (Fig. 4A and Fig. 22).

In regard to claim 29, Shoji discloses that generator generates pulse width data by varying a falling edge of the first pulse of the write pulse in accordance with the magnitude of the leading space and the magnitude of the present mark (Fig. 4A and Fig. 20, element TF).

In regard to claim 30, Shoji discloses that the generator generates pulse width data by varying a rising edge of the last pulse of the write pulse in accordance with the magnitude of the trailing space and the magnitude of the present mark (Fig. 4A and Fig. 20, element TL).

In regard to claim 31, Shoji discloses that the generator generates pulse width data by varying a falling edge of the last pulse of the write pulse in accordance with the magnitude of the trailing space and the magnitude of the present mark (Fig. 4A and Fig. 23).

In regard to claim 32, Shoji discloses a recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising: a generator (Fig. 1, element 110) to generate an adaptive write pulse by varying a falling edge of a first pulse of the write pulse in accordance with a magnitude of a leading space and a magnitude of a present mark (Fig. 20 and Col. 13, lines 1-20) and varying a falling edge of a second pulse of the write pulse in accordance with the magnitude of a trailing space and the magnitude of the present mark (Fig. 20 and Col. 14, lines 8-16), based on at least one table storing width data of the first and/or second pulses in a leading and/or trailing space grouping format (Fig. 4A), with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group (Fig. 4A, element 3T), a middle pulse group (Fig. 4A, element 4T) and a long pulse group (Fig. 4A, element  $\geq 5T$ ); and a driver (Fig. 1, element 109) to drive the light source according to the adaptive write pulse.

In regard to claim 33, Shoji discloses an adaptive write pulse generating circuit, the adaptive write pulse being used for writing input data to an optical recording medium (Fig. 1, element 101), comprising: a write pulse inputting unit (Fig. 1, elements 111) inputting a write pulse, the write pulse including a first pulse, a last pulse and a multi-pulse train (Fig. 2, element 202); a generator (Fig. 1, element 110) generating the adaptive write pulse, by varying a falling edge of the first pulse in accordance with a magnitude of a leading space and a magnitude of a present mark (Fig. 20 and Col. 13, lines 1-20); and varying a falling edge of the last pulse in accordance with a magnitude of a

Art Unit: 2652

trailing space and the magnitude of the present mark (Fig. 20 and Col. 14, lines 8-16), based on at least one table storing width data of the first and/or second pulses in a leading and/or trailing space grouping format (Fig. 4A), with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group (Fig. 4A, element 3T), a middle pulse group (Fig. 4A, element 4T) and a long pulse group (Fig. 4A, element  $\geq 5T$ ); and an outputting unit (Fig. 1, element 109) to output the generated adaptive write pulse.

In regard to claim 35, Shoji discloses a recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising: a generator (Fig. 1, element 110) to generate an adaptive write pulse using a grouping table having width data of first and/or last pulses of a write pulse waveform according to a magnitude of a present mark of the input data and magnitudes of leading and/or trailing spaces of the present mark (Fig. 4A), with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group (Fig. 4A, element 3T), a middle pulse group (Fig. 4A, element 4T) and a long pulse group (Fig. 4A, element  $\geq 5T$ ); and a processor (Fig. 1, element 120) to process data on a recording medium, wherein the adaptive write pulse includes a first pulse, a last pulse and a multi-pulse train (Figs. 20, 22 and 23).

In regard to claim 36, Shoji discloses a recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising: a generator (Fig. 1, element 110) to generate an adaptive write pulse using a grouping table (Fig. 4A) having width data of first and/or last pulses of a write pulse waveform, with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group (Fig. 4A, element 3T), a middle pulse group (Fig. 4A, element 4T) and a long pulse group (Fig. 4A, element  $\geq 5T$ );



Art Unit: 2652

and a processor (Fig. 1, element 120) to process data on a recording medium, wherein the adaptive write pulse includes a first pulse, a last pulse and a multi-pulse train (Figs. 20, 22 and 23), and is different in respective zones on the recording medium (Col. 10, lines 27-32 and Col. 12, lines 8-15).

***Claim Rejections - 35 USC § 103***

4. Claims 23 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoji in view of Nishiuchi et al (hereafter Nishiuchi) (US 5,568,461).

Applicant cannot rely upon the foreign priority papers to overcome these rejections because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

In regard to claim 23, Shoji discloses the recording and/or reproducing apparatus of claim 21 including a memory (Fig. 1, element 127) that stores pulse width data of the first and/or last pulses for the write pulse waveform. Shoji does not disclose that the memory stores pulse width data of the first and/or last pulses for the write pulse waveform depending on whether the input data is in a land track or a groove track.

Nishiuchi discloses a recording and/or reproducing apparatus that uses memory to store information for pulse patterns optimal for each of a land track and a groove track (Col. 14, lines 7-13 and 33-40) and teaches that using recording signals optimized for writing on a land or a groove will reduce error that is generated when the same recording signal is used for both lands and a grooves (Col. 2, lines 35-39 and Col. 6, lines 36-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the memory of the recording and/or reproducing apparatus of Shoji to

Art Unit: 2652

store pulse width data of the first and/or last pulses of a write pulse waveform depending on whether the input data is in a land track or a groove track as suggested by Nishiuchi, the motivation being to reduce error caused by writing to land tracks and groove tracks in the same manner.

In regard to claim 37, Shoji discloses a recording and/or reproducing apparatus recording and/or reproducing data on a recording medium, comprising: a generator (Fig. 1, element 110) to generate an adaptive write pulse using a grouping table (Fig. 4A) having width data of first and/or last pulses of a write pulse waveform, with the magnitude of the present mark and magnitudes of the leading and/or trailing spaces being grouped according to a short pulse group, a middle pulse group (Fig. 4A, element 4T) and a long pulse group (Fig. 4A, element  $\geq 5T$ ); and a processor (Fig. 1, element 120) to process data on a recording medium. Shoji does not disclose that the write pulse waveform is based on whether input data is in a land track or a groove track.

Nishiuchi discloses a recording and/or reproducing apparatus that optimizes stores write pulse waveforms for either a land track and a groove track (Col. 14, lines 7-13) and teaches that using recording signals optimized for writing on a land or a groove will reduce error that is generated when the same recording signal is used for both lands and a grooves (Col. 2, lines 35-39 and Col. 6, lines 36-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for write pulse waveform of the recording and/or reproducing apparatus of Shoji to be based on whether the input data is in a land track or a groove track as suggested by Nishiuchi, the motivation being to reduce error caused by writing to land tracks and groove tracks in the same manner.

***Response to Arguments***

5. Applicant's arguments filed June 14, 2004, with respect to the rejection of claim 34 as being anticipated by Furukawa have been fully considered but they are not persuasive. Claim 34 does not require the magnitude of the present mark to be grouped according to a short, middle and long pulse group. Therefore, claim 34 is still anticipated by Furukawa as described above.
6. Applicant's arguments with respect to pending claims other than claim 34 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

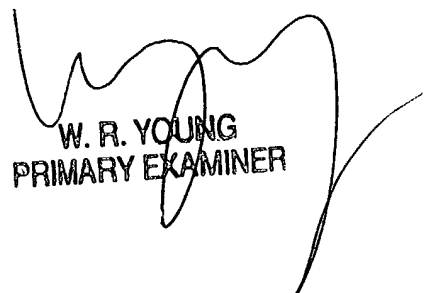
Art Unit: 2652

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Battaglia



W. R. YOUNG  
PRIMARY EXAMINER